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Temporal Aspects of Renaissance Polyphony: Theoretical and Analytical Considerations

This paper is about temporal features of Renaissance polyphony. It examines the concept of musical time from a theoretical perspective, based on the sixteenth-century writings of Zarlino and Vicentino. Their definitions and descriptions of the notion of tempus and the practice of beating the tactus serve as a theoretical basis for an analytical approach of a selected fragment by Willaert. A close reading of the final part of one of his ricercars shows how the specific meanings of tempus and tactus are relevant for the interpretation of the polyphonic texture. The discussion touches upon the aspects of phrasing and rhythmic articulation, which have not yet received much attention when it comes to Renaissance music. Differences between a sixteenth-century and a modern understanding of rhythm and beating time are signalled. They demonstrate how the interpretation of carefully designed polyphony like Willaert's can benefit from the subtle distinctions between mensural and metrical thinking.

This contribution examines the temporal features of Renaissance music: how musical time is conceived and organised in sixteenth-century polyphony. A passage from one of the ricercars of Adriaan Willaert serves as a masterly example in which these matters are most relevant for an appropriate evaluation of the musical texture. The temporal design of polyphony is studied preferably against the background of the historical particularities of the mensural system, which regulates note durations and proportions in medieval and Renaissance music. This system differs from our modern system by terminological and notational subtleties. Before turning to the analysis, the fundamentals of sounding time, beat and rhythm are therefore considered from a theoretical perspective, based on the sixteenth-century writings of Gioseffo Zarlino and Nicola Vicentino, both closely linked to Willaert and his music.[1]

Tempus: The Notion of Musical Time (a Mensural Understanding)

The category of time in general and musical time in particular has puzzled philosophers and theorists from antiquity to the present. In the context of mensural music notation, however, the term *tempus* in Latin or *tempo* in Italian has a specific and well-defined meaning. In his monumental *Istitutioni harmoniche*, Zarlino distinguishes the musical concept of *tempo* from other meanings of the same word:

> La onde dico, che in questo luogo io non chiamo Tempo quello, che significa lo Stato buono, o la buona Fortuna di alcuno; come quando si dice, Francesco è huomo di buon tempo; cioè mena tranquilla, et lieta vita: Ne meno quella buona temperatura di Aria, come si suol dire, Hoggi è buon tempo; cioè hoggi è giorno sereno, chiaro, & lieto: Ne anco nomino Tempo quello, che'l Filosofo definisce essere Numero, o Misura di movimento, o di alcun'altra cosa

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1 On the connections between Willaert and Zarlino and Vicentino, presumed to be his pupils, see Katelijne Schiltz, *Vulgari orecchie – purgate orecchie. De relatie tussen publiek en muziek in het Venetiaanse motetoeuvre van Adriaan Willaert*, Leuven: Universitaire Pers, 2003, 16-19.

> successiva: ma dico il Tempo essere una certa, & determinata quantità di figure minori, contenute, o considerate in una Breve.[2]

It is crucial to observe that when Zarlino mentions *tempo* in the context of the mensural system, no absolute tempo is meant in the modern sense of the word. Following earlier theorists, Zarlino concludes that in music *tempo* (translated as *tempus* to avoid confusion) defines the quantity of smaller values (e.g. semibreves) that constitute one breve. The mensural concept of tempus does not concern the velocity of the music as such. It is only about the velocity of certain notes compared to others in the same piece, i.e. the proportional relation between the durational values.[3]

Traditional musical thinking saw strong connections between the difference in pitch and certain mathematical proportions (following Pythagorean principles). One could equally say that proportionality is a key concept in mensural theory. Notably, the type of tempus defines whether a duple or triple ratio should be taken into account between breve and semibreve. In the case of *tempus perfectum*, one (perfect) breve contains three semibreves, while in *tempus imperfectum*, only two semibreves are needed to equal the duration of the (imperfect) breve. Whether a piece of music follows the proportions of tempus perfectum or imperfectum is indicated by mensuration signs, serving as notational short-cuts in very much the same way as clefs, which reveal how to interpret the notes on a staff in terms of actual pitches. A mensuration sign shaped as a full circle (O) prescribes perfection, while the semicircle indicates the imperfect division of the breve (C – which became our sign for common time, accounting for the quadruple division of the whole note rather than of the original breve).

Being able to apply the correct proportions between different note values is not only necessary for a correct realisation of a single mensural melody, but above all it is indispensable when singing or playing several parts simultaneously. It is worth noting in this context that the vertical juxtaposition of voices in Renaissance polyphony only occurred in its sung realisation. Single parts were notated separately, either contained in individual part books or scattered over the opening of a large choir book. As performers had only visual access to their own line, the polyphonic result was controlled simply by the collective ears of the ensemble (of course, it had been artfully crafted by the composer at an earlier stage). It will be understood that observing the tempus and its proportional consequences is of utmost importance when a successful performance is desired.[4] The whole beauty of the contrapuntal structure depends on the combination of well-chosen pitches at each successive moment in time, producing a

2 Gioseffo Zarlino, *Le istitutioni harmoniche*, Venice, 1558, Book III, Chapter 67. Translation by Guy A. Marco and Claude V. Palisca, *The Art of Counterpoint. Part Three of Le istitutioni harmoniche, 1558*, New York: Da Capo Press, 1983, 268. 'Let it be understood that in this context the term tempus does not refer to the good health or fortune of an individual, in the sense found in the expression 'Francesco è huomo di buon tempo', meaning that Francesco leads a peaceful and happy life. Nor does it refer to the weather, as when we say, 'Hoggi è buon tempo,' meaning today is a fair, clear and pleasant day. Nor does it signify what the Philosopher [Aristotle] defines to be number, or measure of movement, or of other successive elements. Tempus here means a certain and determined quantity of small notes contained or considered in a breve.'

3 Attempts have been made, however, to derive a theory of absolute musical time from certain theoretical utterances concerning the natural human breathing rhythm or the beating of the heart. See Clement A. Miller, 'Sebald Heyden's *De arte canendi*: Background and Contents', *Musica Disciplina* 24 (1970), 79-99; J.A. Bank, *Tactus, Tempo and Notation in Mensural Music from the 13th to the 17th Century*, Amsterdam: Bank, 1972; Dale Bonge, 'Gaffurius on Pulse and Tempo: A Reinterpretation', *Musica Disciplina* 36 (1982), 167-174.

4 This is most obvious in numerous compositions dating back to the fourteenth and fifteenth centuries in which different mensurations appear simultaneously in different voices. In such pieces it is clear that these combinations require mathematical scrutiny (both by the composer and the performers) in order to arrive at the desired vertical intervals at the right moment.

harmonious mix of predominantly consonances in which temporary dissonances should be positioned with great care and caution.

Tactus: Keeping Track of Time (and Each Other)

As the contrapuntal texture arises from the plurality of individual outlines (melodic as well as rhythmic), these constituent layers should be accurately 'geared' to one another (not to use the term 'tuned'). To reach this precise arrangement of multiple parts with regard to the music's temporal organisation, both Vicentino and Zarlino describe a practice of beating the measure as a tool to keep all singers together. Although both theorists use another Italian word for it, that practice is commonly referred to as giving the *tactus* (a term stemming from German sources). Vicentino notifies that without the *misura*, no piece can be sung ('non si può cantare le compositioni musicali') and that even experienced performers need it, as it prevents one voice from going slower or faster than the others ('per quella [misura] i prattici Cantanti modulando insieme si conveneno, ne uno va piu tardo, ne piu presto de l'altro').[5] It should be noted here that although Vicentino touches upon a modern feeling of tempo (that all voices should sing at the same speed), this has no bearing on the mensural notion of tempus as it was defined in the previous section of this paper.

Zarlino also cautions against the disorder that can arise when the voices are not exactly together. He points explicitly to the diversity of rhythms in the different parts sounding together:

> La onde dovemo sapere, che li Musici vedendo, che per la diversità de i movimenti, che fanno cantando insieme le parti della cantilena, per essere l'uno più veloce, o più tardo dell'altro, poteva nascere qualche disordine; ordinarono un certo Segno, dal quale ciascun cantante si havesse da reggere nel proferir la voce, con misura di tempo veloce, o tardo, secondo che si dimostra con le figure diverse cantabili.[6]

The solution to the problem of shifting parts lies in making a sign upon which all performers can orient their individual line. In the same chapter, Zarlino details how that sign is best given in practice:

> Et s'imaginarono che fusse bene, se cotal segno fusse fatto con la mano; accioche ogn'uno de i cantori lo potesse vedere, & fusse regolato nel suo movimento alla guisa del Polso humano.[7]

According to Zarlino's further description, the sign made by the hand is twofold (similar to the so-called human pulse or heartbeat), existing of a downward and an upward movement called *positione* and *levatione*. Two types of beats can be discerned, depending on the kind of mensuration. Equal beat (*battuta equale*), with the same duration for each part of the movement, is needed for mensurations with a binary division. When the whole movement comprises three values of equal length, the beat is made unequal (*battuta inequale*), so that the downbeat takes twice as long as the upbeat. Example 1, based on Zarlino's explanation, shows the realisation of equal beat in the case of a regular tempus imperfectum and unequal beat for

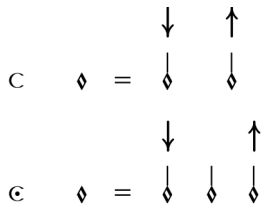
5 Nicola Vicentino, *L'antica musica ridotta alla moderna prattica*, Rome, 1555, Book IV on music practice, Chapter 8. Translation by Maria Rika Maniates and Claude V. Palisca, *Ancient Music Adapted to Modern Practice*, New Haven: Yale University Press, 1996, 239.

6 Zarlino, *Le istitutioni harmoniche*, Book III, Chapter 48. Translation by Marco and Palisca, 116. 'Because they saw that disorder could arise from the diversity of movement within a composition, one voice moving more quickly or slowly than another, musicians devised a certain sign by which each singer might orient himself through faster or slower measures [of time] according to the note values in his part.'

7 Ibidem. 'Such a sign, they found, was best when it was made by the hand in a way visible to all singers through regular movements in the manner of human pulse.'

the same tempus but with major prolation, i.e. the subdivision of the semibreve in three rather than two minimae (prescribed by a dot in the middle of the mensuration symbol).

Example 1
Equal and unequal beat, based on Zarlino's *Istitutioni harmoniche* (Book III, Chapter 48).



Zarlino's theory of tactus may provide a clear picture of the origin and the idea of beating time in Renaissance music. With regard to the application of the battuta in an actual musical performance, however, it only offers indirect evidence. On the basis of other theoretical sources, it appears that the tactus normally falls on the semibreve, as is also the case in Example 1.[8] This means that the whole movement (up and down) equals the duration of one semibreve, consisting of two or three minims, depending on the prolation. However, in sixteenth-century compositions, major prolation is quasi abandoned, while diminished mensuration signs (with a vertical stroke added to the original symbol) are far more common than non-diminished ones. The meaning of diminution is that the overall tempo is quicker, but it does not affect the proportional qualities of the tempus (a breve in 𝔠 still contains two semibreves). In the case of tempus perfectum, theorists differ on which proportion of acceleration should be observed, but in the case of tempus imperfectum, there seems to be general agreement that 𝔠 is twice as fast as C.[9] The question is, though, whether this change in tempo affects the beating of the tactus. Given the duple ratio of velocity between C and 𝔠 it can be assumed that in the case of the latter, the tactus shifts from the semibreve to the breve, so that more or less the same (relatively quiet) pace of movement fits both diminished and undiminished mensurations. The practice of beating *alla breve* is supported by theorists from the late fifteenth century onwards, but it should be added that some conflicting opinions exist upon this topic.[10]

Regarding the nature of tactus as the historical practice of beating time in early music, it is crucial to highlight the difference with the modern understanding of 'beat' – a difference that may be overlooked too easily because Zarlino employs the word *battuta* and describes it as a kind of beating the measure. While a modern interpretation of beat has metrical implications,

8 The existing source material is meticulously examined by Anna Maria Busse Berger, *Mensuration and Proportion Signs: Origins and Evolution*, Oxford: Clarendon Press, 1993.

9 It could be said that diminution adds another layer of proportionality between the different mensuration signs ('cut' and regular). Discussion remains, however, about whether an integer mathematical proportion is meant anyway. See for instance Rob C. Wegman, 'What is "acceleratio mensurae"?', *Music & Letters* 73/4 (1992), 515-524. A more extensive discussion or bibliographic survey about the interrelationships between mensuration signs exceeds the scope of this paper, but another article by Wegman illustrates the ardour of the ongoing debate: 'Different Strokes for Different Folks? On Tempo and Diminution in Fifteenth-Century Music', *Journal of the American Musicological Society* 53/3 (2000), 461-505.

10 The theory that signs in diminution receive a breve tactus accords with the initial description by Adam von Fulda, one of the first theorists to describe tactus (*De musica*, 1490, Book III, Chapter 7; see also Carl Dahlhaus, 'Zur Theorie des Tactus im 16. Jahrhundert', *Archiv für Musikwissenschaft* 17/1 (1960), 31). It is equally reflected in Vicentino's *Antica musica* (Book IV, Chapter 8) and Zarlino's *Istitutioni harmoniche* (Book III, Chapter 49, discussing the syncope). In the case of Zarlino, however, the picture is blurred by conflicting evidence, suggesting semibreve tactus for both non-diminished and diminished signs, in the music examples given in

such as accentual patterns and grouping principles, Renaissance time-keeping only segments that time in a regular way but does not imply a hierarchy of stronger and weaker parts.[11] The idea of tactus as a steady and regular pulse is significant here, as well as the observation that it has only a coordinating function, as can be understood from both Vicentino's and Zarlino's descriptions. Meant to keep all parts at the same pace so that their lines will fit perfectly together in time, the tactus contributes to a correct musical performance. In much the same way as tempus defines the proportions to be observed between the note values, tactus defines the underlying pulse that flows from the mensuration of the composition and sets out the referential framework for the piece's temporal unfolding.[12] It is also worth noting that the bar lines or *Mensurstriche*, added in modern transcriptions, have an auxiliary function (enabling visual coordination of the voices in the score), but – at least in this repertoire – do not establish a grid of metrical accents to be followed by the performer.

Analytical Case Study (Willaert, Ricercar 14)

The following paragraphs present a close reading and discussion of the final section of one of Willaert's ricercars for four voices, included in the first collection of ensemble ricercars ever printed. This Venetian landmark publication of 1540 is suitably entitled *Musica nova*.[13] The fragment demonstrates the analytical implications of the aspects of musical time, such as tempus, tactus and rhythm. Sixteenth-century ensemble ricercars seem a repertoire of peculiar interest for analysing specific and rather technical features of polyphony.[14] They apply the imitative style of contemporary vocal works but have no text, which allows the analysis to focus on purely musical factors. The evaluation of rhythmic qualities can particularly benefit from the absence of text because text underlay and declamation are reasonably thought to have significant influence.[15]

My transcription of the fragment (Example 2) shows that it is built around one subject that alternates in the superius and tenor (first entries in mm. 151 and 155, indicated by bold

Chapter 48 (discussing the battuta itself). Ludovico Zacconi, a late witness of sixteenth-century performance practice, reproaches certain conductors for making disturbingly fast movements, beating ¢ at the semibreve (*Prattica di musica*, Venice, 1592 (Part I) and 1622 (Part II); discussed by Ruth DeFord, 'Zacconi's Theories of Tactus and Mensuration', *Journal of Musicology* 14/2 (1996), 153-159.

11 Describing the music of Josquin de Prez, Rainer Schmusch states that '[d]ie Gesangslinie Josquins ist als ein Bogen vom Anfangs- zum Endton gespannt, *durchpulst* vom Metrum' (my emphasis), stressing polyphony's linearity, supported but not interrupted by a quasi metrical pulse. See 'Tempus / Tempo: Zur musikalischen Zeitvorstellung im 16. Jahrhundert – Nicola Vicentino, Cipriano de Rore und Girolama dalla Casa', in: Herbert Schneider (ed.), *Mittelalter und Mittelalterrezeption: Festschrift für Wolf Frobenius*, Hildesheim: Olms, 2005, 103.

12 Graeme Boone defines tactus as 'the negative image of pulse', stating that it embodies the regularity and neutrality of pulse but emphasises temporal duration (the intervals between the beats) rather than the punctual markings themselves. See 'Marking Mensural Time', *Music Theory Spectrum* 22/1 (2000), 25-35.

13 A single bassus part book is the sole surviving source of this collection (Bologna, Biblioteca del Conservatorio). Nearly all compositions can be recovered, however, thanks to concordances in a later print by Jacques Moderne, *Musicque de joye* (Lyon, ca. 1550). The ricercar under discussion is the fourteenth from the Italian source and is included as number twenty-one in the French collection. A modern edition of *Musica nova* was made by H. Colin Slim as the first volume of the series *Monuments of Renaissance Music* (1964). A facsimile edition of *Musicque de joye* was edited by Samuel Pogue within the Alamire series (Peer, 1991).

14 Cf. Peter Schubert's choice for one of Willaert's three-part ricercars for a multifaceted analysis of the polyphonic fabric: 'Recombinant Melody: Ten Things to Love about Willaert's Music', *Current Musicology* 75 (2003), 91-113. Particular aspects of his analytical strategies are developed further in Simon Van Damme, 'Willaert's Ricercars and their Use of Inganno', in: *Tijdschrift van de Koninklijke Vereniging voor Nederlandse Muziekgeschiedenis* 59/1 (2009), 45-63.

15 See for instance Thomas Schmidt-Beste, *Textdeklamation in der Motette des 15. Jahrhunderts*, Turnhout: Brepols, 2003.

brackets).[16] The repetition is exact, apart from the final note (the tenor not cadencing on f in m. 155) and apart from the opening rhythm, wich has a dotted minim and a semiminim as the second and third note in the tenor, as opposed to two minims in the superius. A preceding version of the same line can be found in the superius at m. 147, transposed up a third and with the ornamental addition of one semiminim (the second g in m. 148). In m. 159, a mensuration sign changes the duple division of the breve (defined by the piece's initial tempus imperfectum diminutum) into a triple division (indicated here by a number 3). This does not prevent the tenor from repeating the same subject again, though it be in augmented note values (the original minims become semibreves). In m. 162 the superius has the same melody one more time, leading to the final cadence in mm. 166-167 (followed by a plagal cadential extension). Both statements of the subject in triple time adopt the ornamented variant of the preliminary version of the superius.

The inclusion of a thematic whole in both duple and triple time is one reason why this fragment is interesting in light of what has been theoretically discussed above. The simultaneous change of mensuration and note values results in a mathematical rescaling of the actual sounding durations.[17] The division of each breve in three semibreves rather than in two speeds up the relative pace of semibreves and minims, while the augmentation slows down the rhythm. Departing from the hypothesis that one breve = MM 30, the minims of the first version sound at MM 120. If the speed of the breve remains unaltered in m. 159 (which is most plausible) the following semibreves that begin the new version sound at MM 90. Thus Willaert's manipulation of his material is heard as a retardation by one fourth of the initial durations. This ostensible change of tempo (in the modern sense of overall velocity of the music) stems from the notational change of both tempus (i.e. the mensural proportions) and rhythm.

Slowing down at the end of a piece is of course a natural thing to do, for it provides the final statements of the subject with more rhetorical power. The musical function of this final fragment could be compared with the kind of short closing *largo* or *adagio* sections that are often encountered in later baroque music (for instance). The mensural system, however, allows to specify the exact difference between the retardation and what sounds before it. Visually, in a more intuitive sense, the idea of opening up the texture is equally reflected by wider spacing in the modern transcription, which results from the use of larger note values.[18] In the original notation, however, this temporal aspect is not visualised solely by the shapes of the notes themselves. As can been seen in Example 3 the spacing remains unaltered (there is also no need to because vertical alignment of voices is not at stake in part book notation). This makes the melodic similarity between both versions much more evident, while it is somehow obscured in the transcription.

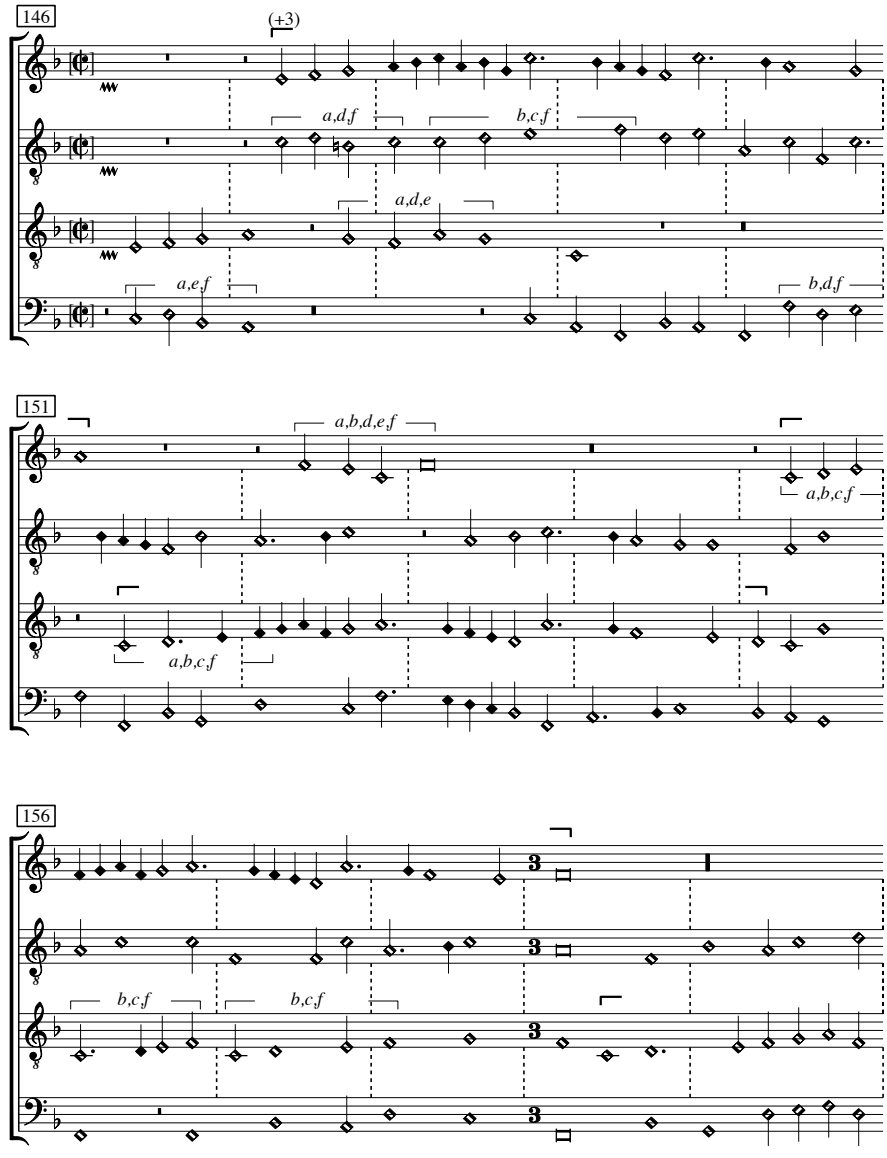
As stated previously, the beginning of the subject differs slightly in superius and tenor. Notwithstanding the dotted variant in the latter, both versions share the following characteristics (compare the entrances in mm. 151 and 155): they are preceded by a rest and start with a stepwise ascending motion leading from c to f, which is also the final of the piece and its mode, as well as the point where the subject begins to develop its typical curve of semiminims. The significance of this opening gesture, as common as it may seem, lies in the

16 The compositional significance of subjects like this in Willaert's polyphony, as well as their relation to Zarlino's central concept of a 'soggetto', is discussed in Benito Rivera, 'Finding the Soggetto in Willaert's Free Imitative Counterpoint: A Step in Modal Analysis', in: David Walter Bernstein and Cristopher Hatch (eds), *Music Theory and the Exploration of the Past*, Chicago: University of Chicago Press, 1993, 73-102.

17 Willaert also demonstrates his contrapuntal skills by interlocking the two final statements of the theme, the superius entering while the tenor has not yet finished (m. 162).

18 Music notation software tends to increase horizontal spacing between larger note values. Although it is generally believed to improve the readability of the score and has been applied in manual typesetting before computerised music notation came into use, this feature could of course be altered easily.

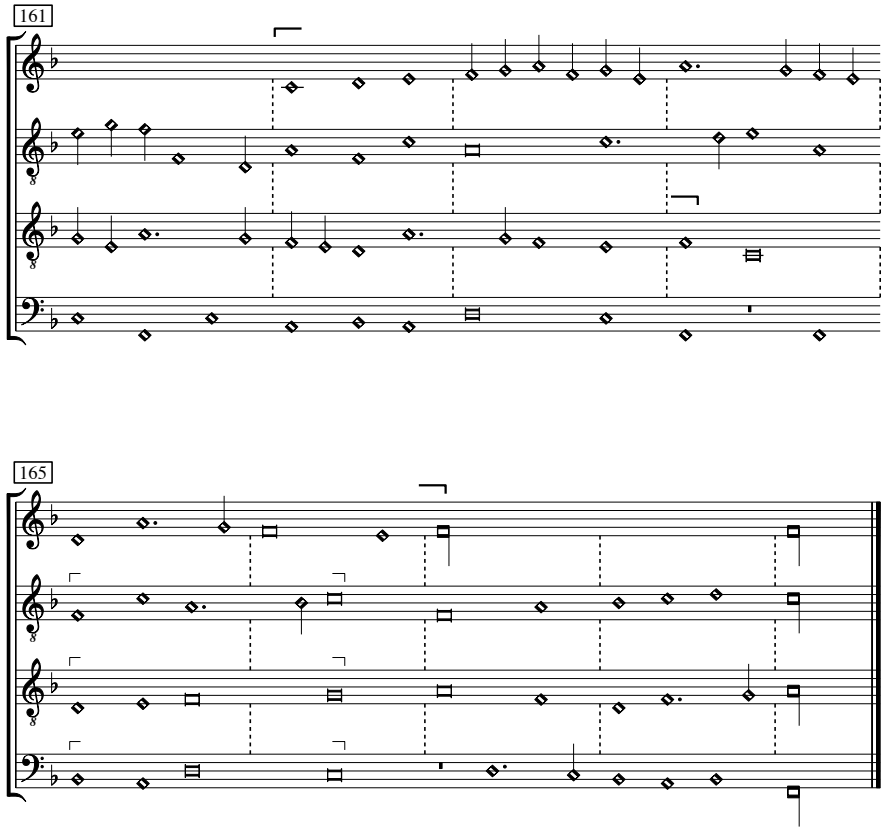
Example 2
Willaert, Ricercar 14: Transcription of the final section.



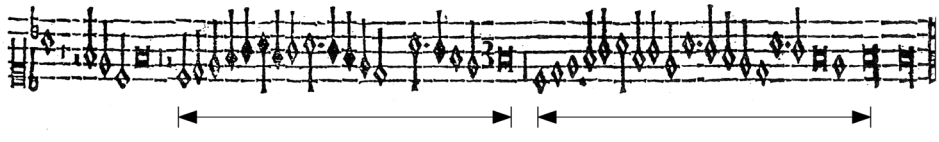
fact that it introduces the subject and creates a feeling of recognition within the listener. It is typical for a composer like Willaert, however, to integrate a certain musical idea in the rest of his composition, creating further levels of audible as well as structural coherence. A detailed examination of the mm. 146 to 155 reveals that other formulae with similar characteristics pervade the accompanying polyphonic texture.[19] Their detection relies on tracing down

19 The idea of structural integration on the basis of relatively short and (at first sight) unsuspicious musical ideas is closely related to the technique of 'motivicity' as it was called by Joshua Rifkin, 'Miracles, Motivicity and Mannerism. Adrian Willaert's *Videns Dominus flentes sorores Lazari* and Some Aspects of Motet Composition in the 1520s', in: Dolores Pesce (ed.), *Hearing the Motet. Essays on the Motet of the Middle Ages and Renaissance*, New York: Oxford University Press, 1997, 243-264.

Example 2 (continued)
Willaert, Ricercar 14: Transcription of the final section.



Example 3
Willaert, Ricercar 14: Facsimile of the final line in the superius (reproduced from the edition *Musicque de joye*).



four-note cells with similar characteristics as the start of the actual subject. A prominent appearance of such a motif, standing out by its isolation, can be found in the superius (m. 152). The pitches are different (apart from the note f, which features also as the modal focus point), as well as the melodic motion (returning to the first note rather than ascending stepwise). Rhythmically, however, this motif is equally preceded by a minim rest, and it also begins with three minims (followed by a longer note instead of a chain of semiminims). Projecting the distinctive qualities of both the isolated superius cell and the beginning of the actual subject to the rest of the binary section (mm. 146-158), it is remarkable that several groups of four notes, hidden in the polyphonic accompaniment of the first statements of the subject, share at least three of the combined characteristics of these two figures. They are indicated in Example 2 with their distinguishing features specified as follows: (*a*) preceded

by a rest, (*b*) fourth pitch f, (*c*) stepwise ascending motion, (*d*) melodic return to the first note, (*e*) three shorter notes followed by a longer value, (*f*) semitone relation between one of the first three notes and the fourth one.[20]

It can be seen that all but three of the motifs identified according to the above principles are in the same position with regard to the tactus: they occur one minim after the downbeat (i.e. on the second minim of a modern bar). Only in m. 147 does the tenor start after the upbeat. In mm. 156 and 157 of the same voice, the motifs are related mainly by their melodic outline but fall on the downbeat of the tactus itself.[21] It is striking how a regular temporal pattern can be discovered from m. 146 to 152 with regard to the occurrence of the cells identified by the procedure described above. (I kindly invite the reader to read through the music, switching between the parts and only singing the highlighted motifs.) With the exception of m. 149, one such cell begins after the downbeat of every measure, in one voice or another (bassus in 146, altus in 147, altus in 148, bassus in 150, tenor in 151, superius in 152). In addition, the characteristics by which they are related all contribute to a kind of 'directionality' (three shorter notes leading to a modally significant note like f, which is reached on the next downbeat). One could say that each bar is musically taken to the next one with a figure that goes from the first afterbeat to the following downbeat. It is my opinion that the temporal regularity of this pattern (at the distance of exactly one breve) is perceived as such, but – and this is crucial – that it does not result primarily from a pre-determined metrical hierarchy of strong and weak beats, but rather from an almost obsessive recurrence of the motifs when the voices are combined in polyphony.

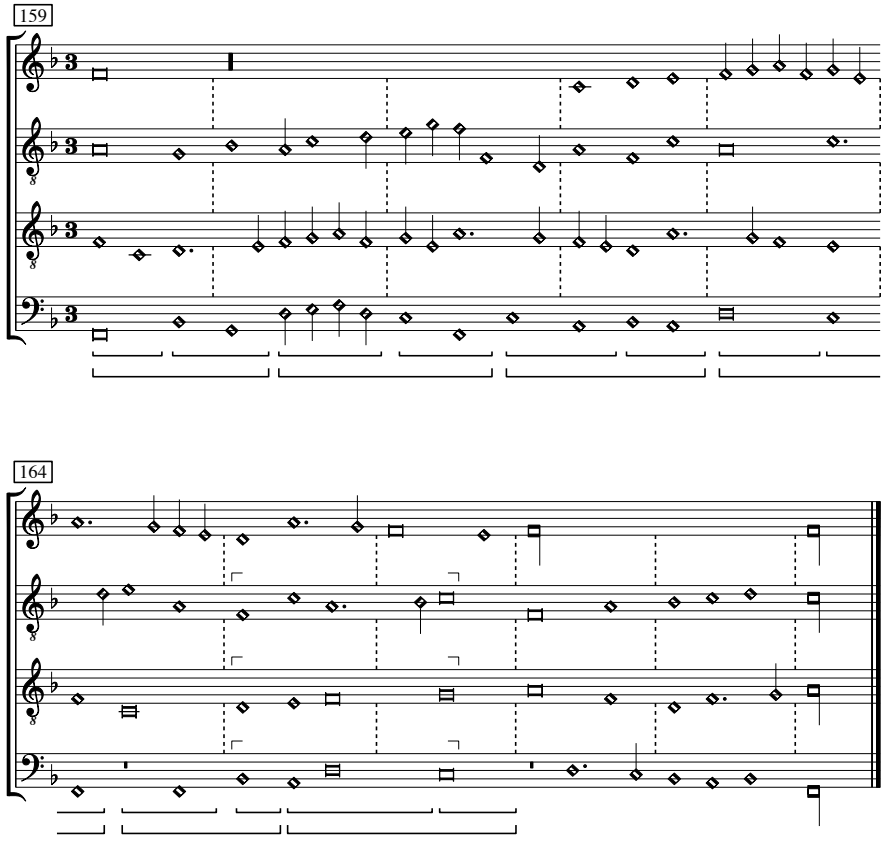
It is worth indicating here that the regularity is completed and extended by two places in the altus in which a similar cell seems to start but is broken off in an untimely manner. If an f' could be presumed as the first note of m. 150 (instead of a), the altus would prefigure the motif in the bassus from that same measure (f-d-e-f) by one bar, completing the chain of cells with an occurrence in m. 149. Furthermore, in m. 153, the ascending minims after a minim rest in the altus seem to continue the regularity of the preceding bars. The pattern is diverted, however, into the deceptive cadential formula of mm. 154 and 155 upon which the subject appears in the superius.[22] On the other hand, it should be taken into account that the altus motif in m. 148 weakens the signalled regularity by delaying the final f in m. 149 and singing a semibreve on e. Yet this is then the place where the tenor just added an extra cell after the upbeat of m. 147. I point out these details to highlight the sophisticated manner in which the motivic texture is designed.

20 It should be noted that these features represent a class of characteristics that are neither sufficient nor all necessary to classify a motif as musically related to the two motifs from which the features are derived. In fact some of them, like (*c*) and (*d*), cannot be present together. Also the combination of (*b*) and (*c*) induces the semitone relation (*f*) – unless e-flat would be prescribed. However, the separate listing of the latter feature makes sense when no stepwise motion is present (highlighting for instance the difference between the cambiata figures in altus and tenor, mm. 147-148).

21 The procedure of shifting motifs in relation to the tactus is called 'stress reversal' by John Milsom, 'Crecquillon, Clemens, and Four-Voice *fuga*', in: Eric Jas (ed.), *Reassessing the Art of Clemens non Papa and Thomas Crecquillon*, Turnhout: Brepols, 2005, 321. Occurring when the subject is presented for the second time, just before the piece reaches its climax (the ultimate change of mensuration), it can be seen here as another demonstration of Willaert's talent for combining structural integration with rhetorical power.

22 By the end of m. 154, all three sounding voices are in position to cadence on f on the beginning of m. 155, but unexpected continuations of the different clausulae postpone the actual cadence to m. 156. At the occasion of my lecture at the *11th Conference of the Dutch-Flemish Society for Music Theory* (where this paper was initially presented), I demonstrated how this ingenious disposition can even trouble the performance of this piece as it was recorded by Danilo Lorenzini, Antonio Eros Negri, Riccardo Villani and Giuseppe Azzarelli in Willaert's Opera Omnia series, vol. 7: *Adrian Willaert e la sua cerchia Ricercari da Musica Nova (1540)*, Stradivarius 33355 (1993), track 12 at 4'47.

Example 4
Willaert, Ricercar 14: Section in triple time with added rhythmic grouping patterns.



Given the temporal regularity that dominates a large part of the binary section of this ricercar's finale, the question arises as to whether and how such regularity can also be present in the section in triple time. If the beginning of the subject has an 'upbeat' character (although the term is misleading in its implicit metrical connotations), then what is Willaert's intention when he repeats the same melody in a different mensural framework? Do the entries in mm. 159 and 162 (on the second and first semibreve respectively) imply a shift in accentuation and phrasing, in addition to the proportional change of sounding durations? I believe that the answer to the last question is no, arguing that the triple division in itself does not imply a strong-weak-weak pattern. Not only is it hard to apply such a scheme to the lines under consideration (the tenor version from m. 159 in particular), but also the purpose and nature of mensuration and tactus, as discussed above, have no direct influence on the eventual rhythmic articulation. Although the apparent regularity of the motifs in the binary section coincides with the underlying pulse of the tactus, their accentual pattern derives from particular melodic and rhythmic features and is not inherent to the underlying pulse. In the triple section, that pulse may be different (if an unequal tactus is observed, the downbeat falls on the first semibreve and the upbeat on the third), but I propose to maintain the same phrasing of the subject (i.e. with the fourth note as the first 'strong' one, preceded by a three-note 'run-up'). Consequently, from m. 159 onwards, the accentual pattern will differ significantly from what the bar lines suggest, which makes the transcription more confusing than illuminating. Yet, performing from a single part book without bar lines (such as Example 3) allows for a greater flexibility to apply a phrasing that seems best for the individual melody at play. In this case, that very same melody has sounded

several times before with a rather clearly distinct underlying framework (mm. 147-158, with the regular occurrence of the indicated motifs), so its shape and outline are familiar by then to both performer and listener.

In Example 4, brackets are added below the score, suggesting a rhythmic grouping pattern 'in two' with a division in imperfect breves (two semibreves) and a resulting 'hypermeasure' of four semibreves for each two groups. Applying this pattern to the music restores the 'upbeat' character of the theme: the focal f in both tenor and superius falls neatly on the beginning of a new group at both 'metrical' levels. Also, the hemiola in mm. 165 and 166 (indicated by coloration in the original notation) fits perfectly within the new time structure – in fact, it does not feel like a hemiola any more. As can be seen, the suggested groupings are largely independent from the bar lines, which have been dashed on purpose. The editorial addition of bar lines in a modern transcription occurs traditionally in correspondence with the prescribed mensuration (i.e. triple time) and mostly coincides with the tactus movement that follows from it (i.e. unequal beat, with a downbeat of two semibreves followed by an upbeat of one). In music of later times, meter and bar lines reflect a framework and imply an alternation of strong and weak beats (which, to be sure, does not prevent certain composers to go against them deliberately). In mensural music, however, such an automatism is not present, nor is it desired. The mensuration sign details which proportions should be observed between the notated symbols, while the tactus helps performers to stay together, but neither of them dictates accentual patterns that would overrule the logical phrasing of the actual melodies.

From a theoretical perspective, it is important to see the subtle but crucial differences between certain mensural and modern concepts. Tempus and tempo, as well as tactus and beat, seem to be related but are actually more like 'false friends'. Tempus and tactus are primarily important for the notational system and its correct realisation but they do not necessarily affect the rhythmic qualities of the music. As can be derived from its theoretical definitions, tempus establishes internal proportions of duration (such as the acceleration/retardation in Willaert's m. 159). The tactus then provides a certain pulse, meaningful in the context of the prescribed mensuration, allowing the performance to be accurate. The rhythmic qualities reside at the level of the individual voices, their melodic design and the polyphonic combination. The emerging temporal outline can be found to correspond to the regularity of the tactus (such is the case with Willaert's placement of the indicated motifs), but the two do not need to match (as has been demonstrated in Example 4).[23] Therefore, in Renaissance polyphony, tempus and tactus are auxiliary phenomena of the same nature as staffs, clefs and note symbols: they help to read the music notation properly and perform it successfully. These markings are not decisive, however, when it comes to accentuation, articulation and phrasing, which are left to the musical insight of the performers acquainted with this particular repertoire. It is their task to uncover the textural richness and to highlight the rhythmic subtleties of Renaissance polyphony like Willaert's, with its clever treatment of motifs and its ingenious manipulation of musical timing.

23 Boone, 'Marking Mensural Time', makes a case for a temporal hierarchy in mensural music too, based mainly on the placement of note attacks. He shows that some points are emphasised more frequently than others (his calculations boiling down to the expected alternation of strong and weak). His findings, however, do not affect the core argument of this paper, namely that it is not meter that creates the temporal framework but the musical content itself (which can still result in the emergence of certain patterns).